

REMARKS/ARGUMENTS

Claims 1-18 remain in the application. Claims 1 and 14 have been amended.

The first section of the Office Action objects to informalities in claims 1 and 14.

Claims 1 and 14 have been amended to address the objections. Further amendments have been made to claim 1. The claim amendments are supported in the application *inter alia*, e.g., paragraphs 25, 29, 30, and 32, as well as in the claims as originally filed. No new matter has been added.

New Claims 19 and 20 have been added to better delineate the invention. The added claims are supported in the drawings and in the application *inter alia*, e.g., paragraphs 25, 29, 30, and 32, as well as in the claims as originally filed. No new matter has been added.

The second section of the Office Action sets forth the provisions of 35 U.S.C. §102(b).

The third section of the Office Action rejects claims 1, 2, and 7 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,881,422 to Narwani, “Narwani” hereinafter.

The fourth section of the Office Action rejects claims 1, 2, and 4 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 949,587 to Ludington, “Ludington” hereinafter.

The fifth section of the Office Action sets forth the provisions of 35 U.S.C. §103(a).

The sixth section of the Office Action rejects claims 3, 5, 6, 8-10, and 17 under 35

U.S.C. §103(a) as being obvious over Narwani.

The seventh section of the Office Action rejects claim 11 under 35 U.S.C. §103(a) as being obvious over Narwani in view of U.S. Patent No. 6,039,050 to Goldenberg, “Goldenberg” hereinafter.

The eighth section of the Office Action rejects claim 12 under 35 U.S.C. §103(a) as being obvious over Narwani in view of U.S. Patent No. 5,829,458 to Chodorow, “Chodorow” hereinafter.

The ninth section of the Office Action rejects claims 13-15 under 35 U.S.C. §103(a) as being obvious over Narwani in view of U.S. Patent No. 2,454,995 to Curran, “Curran” hereinafter.

The tenth section of the Office Action rejects claim 16 under 35 U.S.C. §103(a) as being obvious over Narwani in view of U.S. Patent No. 3,939,522 to Shimuzu, “Shimuzu ‘522” hereinafter.

The eleventh section of the Office Action rejects claim 18 under 35 U.S.C. §103(a) as being obvious over Narwani in view of U.S. Patent No. 5,84,719 to Gordon, “Gordon” hereinafter.

To expedite prosecution, all rejections will be treated as though applied to the claims as amended.

Applicant traverses all rejections and requests reconsideration. Applicant also reserves the right to swear behind references where appropriate.

§102 Rejections

Claims 1, 2, and 7 stand rejected as anticipated by Narwani. The Office Action

states:

Narwani discloses a folding toothbrush comprising a bristle arm with bristles attached to one end and a handle arm (device 10) attached to the other. (Although the handle arm (device 10) in Narwani is meant to be a tongue scraper, it is capable of being used as a handle.) The handle arm (device 10) pivots about the end of the bristle arm so that the free end of the handle arm move in an arc in the plane that generally includes the two arms of the toothbrush (50) and that is generally perpendicular to the bristle axis, as explained in column 2 lines 39-44. The handle arm is manufactured from sheet plastic comprising polyvinyl chloride, as explained in column 2, lines 45-50. Polyvinyl chloride is a type of vinyl.

Office Action, pp. 2-3.

Applicant disagrees. Narwani does not really teach a foldable toothbrush; Narwani teaches a tongue cleaner that can be attached to a toothbrush – apparently so that the tongue cleaner will not get lost. As Narwani states, "As shown in FIG. 2, the device 10 can be pivotally attached to toothbrush 50 at attachment point 55, thereby enabling a user to have ready access to all needed dental and oral hygiene implements." Narwani, col. 2, *ll.* 39-44. Narwani's device is not designed to be used with the two joined segments collinearly extended to clean the teeth, as would occur in a folding toothbrush such as Applicant's; the toothbrush is used as a toothbrush, and the tongue cleaner used separately as a tongue cleaner. As Narwani states, "[t]he user of device 10 would hold device 10 with both hands in a slightly flexed fashion. The user will open his/her mouth and extend his/her tongue therefrom and scrape his tongue by moving device 10 across the tongue." Narwani, col. 2, *ll.* 58-61. In the quoted lines and elsewhere in Narwani, the disclosure clearly distinguishes its tongue-cleaning device from a toothbrush, *e.g.*: "It is a further object of the present invention to provide a tongue cleaning device which can be

attached to a standard toothbrush." Narwani, col. 1, *ll.* 61-63. The claims do not define the tongue scraper as a toothbrush. In contrast, Applicant's invention *is* a toothbrush.

In addition to the very definition of the novel item, the particular claim limitations clearly distinguish over Narwani. Narwani nowhere discloses a foldable toothbrush comprising a bristle arm and a handle arm including an overlapping area at least one-eighth of the total length of the toothbrush, nor a foldable toothbrush with an overlapping area at least 0.5 inches in length, as required by Applicant's claims. Narwani nowhere describes a handle arm and bristle arm that overlap by a substantial fraction of the total toothbrush length. Accordingly, Narwani does not anticipate Applicant's claims.

Claims 1, 2, and 4 stand rejected as anticipated by Ludington. The Office Action states:

Ludington discloses a folding toothbrush comprising a bristle arm (back 1) with bristles (2) attached to one end and a handle arm attached to the other. The handle arm (3) pivots about the end of the bristle arm (back 1) so that the free end of the handle arm moves in an arc in the plane that generally includes the two arms (back 1 and handle arm 3) of the toothbrush and that is generally perpendicular to the bristle axis, as explained in lines 38-58 of page 1. The arms (back 1 and handle arm 3) are attached to each other by a solid rivet (pin 5).

Office Action, p. 3.

Applicant disagrees. Ludington does not disclose the specific claimed functional elements of Applicant's system, including, *inter alia*, a thin handle arm, attachment means positioning that achieves functional goals and overlapping handle and bristle arms that reinforce the toothbrush's stability without complex and costly mechanical means. Accordingly, Ludington does not disclose the limitations of Applicant's claims and does

not anticipate the present application.

Although the motivations and goals of Ludington's invention as compared to Applicant's system are not relevant to a rejection under 35 U.S.C. §102, to forestall obviousness rejections it is illuminating to examine the differences between Ludington's teachings and Applicant's system.

Applicant's limitations are not simple design choices; they have clear functional value. The particular innovative design of Applicant's toothbrush places the user's hand over the attachment means during normal toothbrushing, thereby reinforcing the toothbrush joint and working synergistically with the normal arm, wrist, and hand motions during toothbrushing. None of the cited art discloses a system where the design of arms and joint in a folding toothbrush exploits the hand placement and user motions so that toothbrush material and manufacture can be simplified, thereby reducing production cost and providing a compact, lightweight, economical, and disposable toothbrush.

The goal of Ludington's system is the protection of the toothbrush while it is being carried around after use. Ludington states:

The object of my invention is to provide a tooth brush of the character mentioned [e.g., "designed to be folded together, when not in use, so that the same may be readily carried in the pocket"], and in connection therewith a housing or casing therefor, said housing being adapted to entirely and completely incase the brush, when in folded position, so as to prevent contamination thereof while resting in the pocket ...

Ludington *II*. 13-19, quoted insert at *II*. 8-10. In contrast, Applicant is not particularly concerned with protecting her toothbrush after use; one goal in her design is minimizing materials and simplifying manufacture, thereby reducing production costs so that it could

be economical to dispose of the toothbrush after a single use. Ludington is clearly not directed to reducing the amount of material used in the manufacture of its toothbrush nor is it directed to simplicity of manufacture. In fact, to achieve its goal of compactness in length, Ludington's system relies on a two joints and a complicated system of springs and registering slots to provide stability for its toothbrush. Ludington states:

In order to effect a rigid yielding retention of the brush shank and handle in alining [sic] position, I provide the contacting surfaces of said parts with centrally positioned longitudinally extending elongate slots or recesses 8 so arranged therein that, when said parts are positioned in alinement as stated, said slots will be in registering position with each other. Provided in said recesses are curved leaf springs so arranged therein that the extremities of one thereof are adapted to forcibly engage the extremities of the other, when the brush shank and handle are in alinement with each other.

Ludington, *II*. 87-101. In contrast, Applicant's system does not require springs, slots or recesses; the design allows for reduced materials and simple manufacture.

§103 Rejections

Claims 3, 5, 6, 8-10, and 17 stand rejected as obvious over Narwani. Applicant notes for the record and as applied to all obviousness rejections discussed *infra*, none of the art cited in combination with Narwani discloses the elements of Applicant's claims, discussed above in relation to the anticipation rejections, that Narwani lacks. Accordingly, since even the combination of art does not disclose the elements of Applicant's claims, Applicant asserts that her claims are not obvious over the cited art, either singly or in any combination.

The Office Action notes that Narwani does not disclose an annular grommet or brad, nor a bristle arm manufactured in the claimed range of 0.008 and 0.5 inches in thickness. However, the Office Action asserts that both the attachment means and the range of thickness of the bristle arm are obvious modifications of Applicant's system. Applicant disagrees.

Narwani nowhere discloses a handle arm that is pivotally attached to a bristle arm and that is used to form a handle to be used in brushing the teeth, as required by Applicant's claims. Narwani discloses a toothbrush with a conventional-length handle and a pivotally attached tongue cleaner. The tongue cleaner in Narwani is approximately 7.75 inches in length. Narwani, col. 2, ll. 35-36. In Narwani, the tongue cleaner and the toothbrush handle are approximately the same length, so that if the tongue cleaner were to be pivoted so as to be generally collinear with the toothbrush handle, the total length would be 15.5 inches, which is longer than would be useful for a toothbrush.

Also, part of the usefulness of Applicant's invention is that the user's hand provides support at the attachment means; this is nowhere discussed, suggested, or disclosed by any of the cited art, nor is any motivation supplied by the art to suggest modification of their systems to yield the limitations of Applicant's claims.

In fact Narwani teaches away from Applicant's invention. In Narwani, the tongue cleaner is designed to be grasped at either end of the cleaner – *i.e.*, with one hand generally at the attachment means, and the other at the terminus – and the broad edge of the cleaner then moved across the surface of the user's tongue.

In contrast, in Applicant's system, the arms connected by the attachment means are designed to be used as a single unit, with all subunits of Applicant's system to be

moved together, controlled by a single hand on the system. Nor is Narwani particularly concerned with making his toothbrush compact in length and thickness. Applicant's design addresses motions and uses not contemplated by Narwani; therefore Narwani does not suggest them.

Applicant's limitations are not simple design choices; they have clear functional value. The particular innovative design of Applicant's toothbrush places the user's hand over the attachment means during normal toothbrushing, thereby reinforcing the toothbrush joint and working synergistically with the normal arm, wrist, and hand motions during toothbrushing. None of the cited art discloses a system where the design of arms and joint in a folding toothbrush exploits the hand placement and user motions so that toothbrush material and manufacture can be simplified, thereby reducing production cost and providing a compact, lightweight, economical, and disposable toothbrush.

The Office Action also states:

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the toothbrush bristle arm of Narwani out of sheet plastic that is between 0.008 and 0.5 inches in thickness, in order to achieve a desired strength and rigidity of the device as well as to lower manufacturing costs by using the same type of plastic for the bristle arm as used for the handle arm (the desire to lower manufacturing costs is discussed in column 2, lines 45-51).

Office Action, page 4, *ll. 11-17.*

Applicant disagrees. As discussed, Narwani does not disclose either a handle arm or a bristle arm within the claimed range. Narwani discloses a toothbrush with a handle of unspecified thickness and a tongue cleaner of a range between 0.013 and 0.018 inches. Narwani's toothbrush handle is 7.75 inches long; Applicant asserts that a toothbrush

handle of that length and that thinness would not be functional, or at any rate would not offer the specific advantages, *e.g.*, stability, of Applicant's system with its claimed specific configuration, including attachment means and positioning, dimensions of the brush, and overlapping arms. The thickness of Narwani's tongue scraper is irrelevant to Applicant's invention; first, it is not a toothbrush, and second, it is designed to be grasped at either end and scraped across the tongue, which is a very different motion and use from Applicant's claimed toothbrush, which is designed to be applied to the teeth. Incidentally, reduction of cost is a universal motivation. Its very universality renders it an insufficient motivating force without specific reference or suggestion to *how* the desired cost reduction is to be achieved.

Because Narwani nowhere addresses the specific claim limitations nor suggests, discloses, or teaches sufficient motivation to modify its teachings to achieve the advantages of Applicant's claims, Applicant asserts that her invention as claimed is not obvious over Narwani.

Claim 11 stands rejected as obvious over Narwani in view of Goldenberg. The Office Action notes that Narwani does not disclose dental floss in the handle arm, but cites Goldenberg as supplying the elements lacking in Narwani. Applicant disagrees. Goldenberg does not supply the elements lacking in Narwani, as discussed above, and Applicant reiterates those arguments *mutatis mutandi*.

Claim 12 stands rejected as obvious over Narwani in view of Chodorow. The Office Action notes that the Application does not disclose a detachable toothpick integrally formed in the handle arm, and cites Chodorow as supplying the elements lacking in Narwani. Applicant disagrees, and reiterates the arguments above, *mutatis*

mutandi

Claims 13-15 are rejected as obvious over Narwani in view of Curran. The Office Action states that Narwani does not disclose manufacturing the arms from laminated cardboard, but purports to find the missing elements in Curran. Applicant disagrees; Curran does not supply the elements lacking in Narwani.

Claim 16 is rejected as obvious over Narwani in view of Shimizu '522. The Office Action states that Narwani does not disclose manufacturing the toothbrush arms from bamboo, but purports to find the missing elements in Shimizu '522. Again Applicant disagrees; Shimizu '522 does not supply the elements missing in Narwani.

Claim 18 is rejected as obvious over Narwani in view of Gordon. The Office Action states that Narwani does not disclose toothpaste applied to the toothbrush in advance of purchase, but asserts that it finds the lacking elements in Gordon. However, Gordon does not supply the elements that Narwani lacks.

As discussed, the cited art, taken singly or in any combination, does not supply the limitations of Applicant's claims. Moreover, there is no teaching to modify the existing art to yield Applicant's invention. Accordingly, Applicant's invention as claimed is not obvious over the cited art.

CONCLUSION

Applicants submit that the invention as claimed is not disclosed, taught, or suggested by the cited art. Therefore, it is submitted that all pending claims are allowable over the art of record and it is respectfully requested that the application be passed to allowance and issue.

Respectfully submitted,



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Attachments**PATENT**

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Marked-Up Version of the Claims Showing Changes

1. A folding toothbrush comprising:
 - a bristle arm including means for cleaning teeth and stimulating gums, said cleaning means having an end attached to said bristle arm and a free end, said attached end and said free end defining a bristle axis;
 - a handle arm;
 - an attachment means for attaching said bristle arm and said handle arm such that ~~at least one of~~ said bristle arm and said handle arm can be positioned relative to each other by rotation in an arc in the plane that generally includes the two arms of the toothbrush and that is generally perpendicular to the bristle axis, said bristle arm and said handle arm when positioned generally collinearly in said plane together defining a toothbrush length, said toothbrush length having a bristle end and a terminus;
said attachment means being positioned along said toothbrush length no closer to the bristle end than to the terminus, said bristle arm and said handle arm overlapping at least one-eighth the toothbrush length.
14. The toothbrush of claim [12] 13 in which the cardboard is laminated for water resistance.
19. The toothbrush of Claim 1 in which the overlapping portion is at least 0.5 inch long.
20. The toothbrush of Claim 1 in which the overlapping portion includes the midpoint of the length of the toothbrush.